

HALL TICKET NUMBER

--	--	--	--	--	--	--	--	--	--

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)

IV B.TECH I SEMESTER END REGULAR EXAMINATIONS, NOV-2022
ENERGY AUDIT, CONSERVATION & MANAGEMENT
(EEE Branch)

Time: 3 hours

Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-AAnswer **all** the questions in Part-A (5X2=10M)

Q.No.	Questions	Marks	CO	KL
1.	a) What is the need of Energy management?	[2M]	1	1
	b) What is the necessity of Replacement of existing lighting systems?	[2M]	2	1
	c) Write the applications of Lux meter.	[2M]	3	1
	d) What are the factors that affect the cooling rate in Air conditioning?	[2M]	4	1
	e) The cost of heat exchanger is Rs 1 lakh. Calculate simple payback period considering annual operating cost of Rs. 15000 and annual saving potential of Rs. 60000.	[2M]	5	3

PART-BAnswer **One** Question from each UNIT (5X10=50M)

Q.No.	Questions	Marks	CO	KL
UNIT-I				
2.	What are the different types of Energy Audit? Explain Energy Index and Cost Index.	[10M]	1	1
OR				
3.	a) Explain the Organizing Energy Management Program?	[5M]	1	2
	b) Discuss the various qualities and functions of Energy Manager.	[5M]	1	6
UNIT-II				
4.	a) Discuss in detail about different Luminaries used to increase energy efficiency.	[5M]	2	6
	b) Explain the design considerations followed for flood lighting installation.	[5M]	2	2
OR				
5.	a) What is a polar curve? How is it useful to illumination engineer?	[5M]	2	1
	b) Explain the operation of a fluorescent lamp with a neat circuit diagram.	[5M]	2	2
UNIT-III				
6.	Which is the best location for capacitor banks for power factor improvement from energy conservation point of view? Give detail explanation	[10M]	3	1
OR				
7.	a) Discuss the various effects of harmonics on power factor.	[5M]	3	6
	b) Explain about Energy Instruments- Lux meter & Data logger.	[5M]	3	2
UNIT-IV				
8.	a) Explain the different energy conservation methods required for domestic buildings.	[5M]	4	2

	b)	Discuss the various aspects of space heating.	[5M]	4	6
OR					
9.	a)	Explain the need of energy efficient system and give its merits.	[5M]	4	2
	b)	Explain in detail how conservation of energy is done in the air-conditioning and Water heating?	[5M]	4	2
UNIT-V					
10.	a)	Calculate Net Present Value of a Project whose capital cost is Rs. 30000 and gives annual saving of 6000 each year for a period of 10 years. The annual discount rate is 8%.	[5M]	5	3
	b)	Explain in detail about the Time value of money concept in payback analysis.	[5M]	5	2
OR					
11.		Discuss in detail about the computation of economic aspects by Simple Payback Method and Net Present Worth method.	[10M]	5	6
